



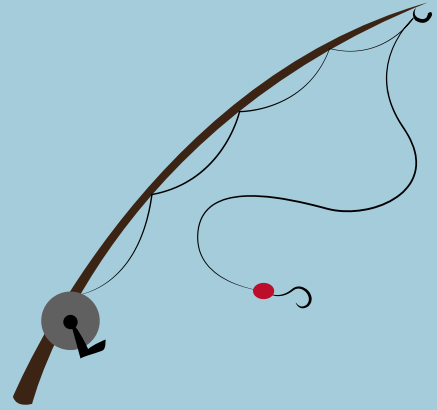
Canton Public Library
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STEAM STOP: SURVIVAL FOOD

FISHING POLE

SUPPLIES

- Various items found around the house. Recyclables work great! For example, wooden dowel or long stick from the yard, paperclips, string, yarn, paper towel tubes, bottle caps, etc.



STEP 1: use items you have around the house to make a fishing pole with a working reel. You'll need the pole itself, something to act as fishing line, and some way to let the line out and wind it back in.

Try it out! Use your fishing rod to hook something out of a pool or bucket of water or just off of the ground outside.

CHALLENGE: only use objects for which you can imagine a corollary in nature. For example: play dough could be mud/clay, string could be long blades of grass or wheat, skewers could be long sticks or branches, etc.

EXPERIMENT & OBSERVE

What changes could you make to your fishing pole to catch bigger (heavier) fish? What about small fish like minnows?

What other tools could you make and use to catch fish from a lake or river?



SOLAR OVEN

SUPPLIES

- Aluminum foil
- Clear plastic wrap
- Glue stick
- Tape
- Stick, knitting needs, ruler, skewer (1 t long)
- Ruler or straight-edge
- Cardboard box (at least 3 inches deep) with attached lid.
- Box cutter or Xacto knife (with adult help, please!)



Ask an adult to cut the box for you

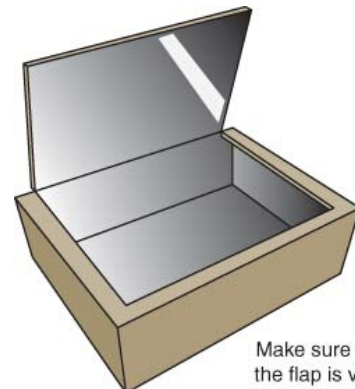
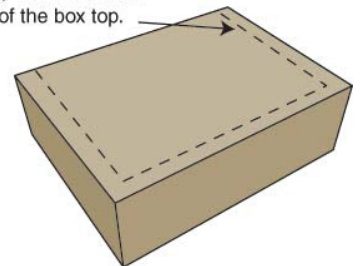
STEP 1: Using the ruler as a guide, cut a three-sided flap out of the top of the box, leaving at least a 1-inch border around the three sides.

STEP 2: Cover the bottom (inside) of the flap with aluminum foil, spreading a coat of glue from the glue stick onto the cardboard first and making the foil as smooth as possible.

STEP 3: Line the inside of the box with aluminum foil, again gluing it down and making it as smooth as possible.

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Cut here, 1 inch from the edge of the box top.



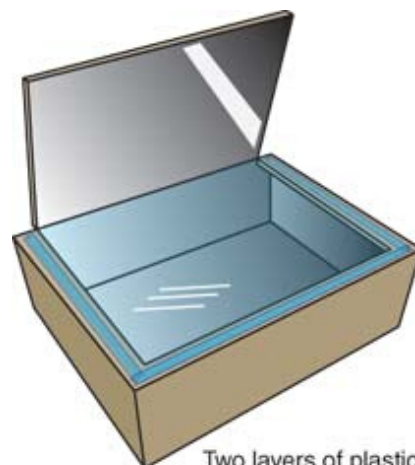
Make sure the foil inside the flap is very smooth, to make it like a mirror.

SOLAR OVEN (CONTINUED)

STEP 4: Tape two layers of plastic wrap across the opening you cut in the lid—one layer on the top and one layer on the bottom side of the lid.

STEP 5: Test the stick you will use to prop the lid up. You may have to use tape or figure another way to make the stick stay put.

Try it out! Set the oven in the direct Sun, with the flap propped to reflect the light into the box. You will probably have to tape the prop in place. Preheat the oven for at least 30 minutes.

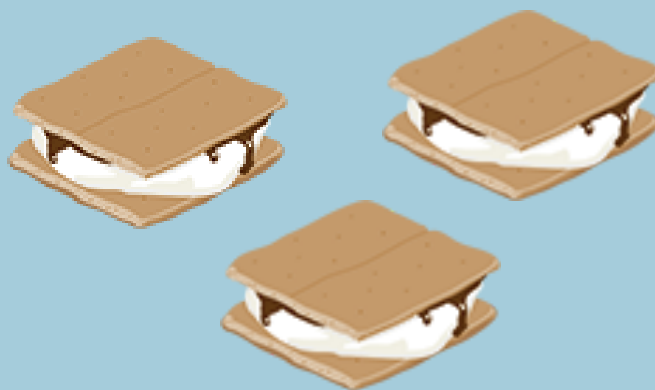


Two layers of plastic wrap over the opening will help keep heat in, while still letting all the light shine through.

SUN S'MORES

SUPPLIES

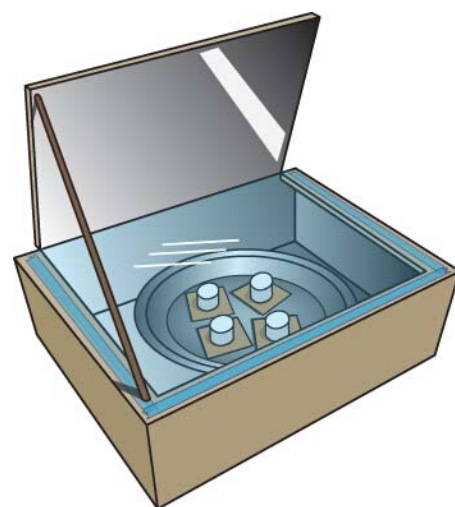
- Graham crackers
- Large marshmallows
- Plain chocolate bars (thin)
- Aluminum pie pan
- Napkins!



STEP A: Break graham crackers in half to make squares. Place four squares in the pie pan. Place a marshmallow on each.

STEP B: Place the pan in the preheated solar oven. Close the oven lid (the part with the plastic wrap on it) tightly, and prop up the flap to reflect the sunlight into the box.

Depending on how hot the day is, and how directly the sunlight shines on the oven, the marshmallows will take 30 to 60 minutes to get squishy when you poke them.



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SOLAR OVEN (CONTINUED)

STEP C: once the marshmallows are squishy, open the oven lid and place a small piece of chocolate on top of each marshmallow. Place a graham cracker square on top of the chocolate and press down gently to squash the marshmallow.

STEP D: Close the lid of the solar oven and let the sun heat it up for a few minutes to melt the chocolate.

Enjoy!



Note that unlike most recipes, our s'mores have the marshmallow **UNDER** the chocolate. That's because, in the solar oven, it takes the marshmallow longer to melt than the chocolate.



EXPERIMENT & OBSERVE

The solar oven is a box that traps some of the sun's energy to make the air inside the box hotter than the air outside the box. In other words, this solar oven is like a super greenhouse.

There are lots of ways to make a solar oven. Some solar ovens do not work like a greenhouse, but instead have so many reflectors that much more sunlight is directed at the food.

Design your own solar oven and test it out by cooking various foods. Can your oven cook an egg? Can it bake brownies?

References

Make sun s'mores! (n,d,). NASA Climate Kids. Retrieved May 26, 2020 from <https://climatekids.nasa.gov/smores/>